What is claimed is:

CLAIMS

1.   A timecode generation method comprising:

receiving an encryption key and an implemented encryption method;

for each one of a plurality of frames, receiving a timecode and an associated presentation time stamp (PTS) associated with the one frame;

for each one of the plurality of frames, encrypting the timecode associated with the one frame using the encryption key and the implemented encryption method, thereby producing a plurality of encrypted timecodes; and

at a time associated with the associated PTS associated with the one frame, outputting a packetized elementary stream (PES) comprising the plurality of encrypted timecodes.

2.   The method according to claim 1 and wherein the implemented encryption method comprises an asymmetric encryption method.

3.   The method according to claim 1 and wherein the implemented. encryption method comprises a symmetric encryption method.

4.   The method according to any of claims 1 - 3 and wherein the timecode comprises an offset from a broadcast headend station time.

5.   The method according to any of claims 1 - 4 and wherein the one frame comprises at least one of the following: video; audio; and data.

6.   A timecode generation method comprising:

receiving an encryption key and an implemented encryption method;

for each one of a plurality of frames, receiving a timecode and an associated decoding time stamp (DTS) associated with the one frame, the DTS occurring in advance of a presentation time stamp (PTS) associated with the one frame;

for each one of the plurality of frames, encrypting the timecode associated with the one frame using the encryption key and the implemented encryption method, thereby producing a plurality of encrypted timecodes; and

at a time associated with the associated DTS associated with the one frame, outputting a packetized elementary stream (PES) comprising the plurality of encrypted timecodes, the PES comprising the plurality of encrypted timecodes not being effective until a time associated with the PTS associated with the one frame.

7. The method according to claim 6 and wherein the implemented encryption method comprises an asymmetric encryption method.

8. The method according to claim 6 and wherein the implemented encryption method comprises a symmetric encryption method.

9. The method according to any of claims 6 - 8 and wherein the timecode comprises an offset from a broadcast headend station time.

10. The method according to any of claims 6 - 9 and wherein the one frame comprises at least one of the following: video; audio; and data.

11. A timecode generator comprising:

a first input unit operative to receive an encryption key and an implemented encryption method;

a second input unit operative to receive a timecode and an associated presentation time stamp (PTS) for each one of a plurality of frames;

an encryptor operative to encrypt the timecode for each one of the plurality of frames, using the encryption key and the implemented encryption method, thereby producing a plurality of encrypted timecodes; and

a packetized elementary stream (PES) outputter operative to receive a plurality of encrypted timecodes and, at a time associated with the associated presentation time stamp (PTS) associated with the one frame, to output a PES comprising the plurality of encrypted timecodes.

12.   The timecode generator according to claim 11 and wherein the encryptor is operative to asymmetrically encrypt the timecode.

5   13.   The timecode generator according to claim 11 and wherein the encryptor is operative to symmetrically encrypt the timecode.

14.   The timecode generator according to any of claims 11 - 13 and wherein the second input unit receives timecode as an offset from a broadcast headend station

10   time.

15.   The method according to any of claims 11 - 14 and wherein the one frame comprises at least one of the following: video; audio; and data.

15   16.   A timecode use method comprising:

            receiving an application file comprising a decryption key and an implemented decryption method;

            receiving a packetized elementary stream (PES) comprising a plurality of encrypted timecodes, each of the plurality of timecodes being associated with a

20   presentation time stamp (PTS); and

            running the application file, the running comprising:

                        performing the following when a system time clock (STC) value equals a PTS value associated with at least one of the plurality of encrypted timecodes:

25   decrypting the encrypted timecode associated with the PTS value using the decryption key and the implemented encryption method, thereby producing a decrypted timecode.

17.   The method according to claim 16 and wherein the decrypting

30   comprises asymmetric decrypting.

18.   The method according to claim 16 and wherein the decrypting comprises symmetric decrypting.

19.   The method according to any of claims 16 - 18 and wherein each of the plurality of timecodes comprises an offset from a broadcast headend station time.

20.   A timecode use method comprising:

receiving an application file comprising a decryption key and an implemented decryption method;

receiving a packetized elementary stream (PES) comprising a plurality of encrypted timecodes, each of the plurality of encrypted timecodes being associated with a decoding time stamp (DTS), at least one of the plurality of encrypted timecodes requiring that a display be updated at one of a plurality of presentation time stamps (PTS); and

running the application file, the running comprising:

performing the following when a system time clock (STC) value equals a DTS value associated with at least one of the plurality of encrypted timecodes:

decrypting the encrypted timecode associated with the DTS value using the decryption key and the implemented encryption method, thereby producing a decrypted timecode; and

updating the display at the one of the plurality of PTSs.

21.   The method according to claim 20 and wherein the decrypting comprises asymmetric decrypting.

22.   The method according to claim 20 and wherein the decrypting comprises symmetric decrypting.

23.   The method according to any of claims 20 - 22 and wherein each of the plurality of timecodes comprises an offset from a broadcast headend station time.

24.   A timecode handler comprising:

a first input unit operative to receive at least one application file comprising a decryption key and an implemented encryption method;

a second input unit operative to receive a packetized elementary stream

5   (PES) comprising a plurality of encrypted timecodes, each of the plurality of encrypted timecodes being associated with a presentation time stamp (PTS); and

a decryptor receiving each of the plurality of encrypted timecodes and operative to decrypt each of the plurality of encrypted timecodes using the decryption key and the implemented encryption method when a system time clock (STC) value

10   equals a PTS value associated with each of the plurality of encrypted timecodes.

25.   The timecode handler according to claim 24 and wherein the decryptor is operative to asymmetrically decrypt each of the plurality of encrypted timecodes.

15   26.   The timecode handler according to claim 24 and wherein the decryptor is operative to symmetrically decrypt each of the plurality of encrypted timecodes.

27.   The timecode handler according to any of claims 24 - 26 and wherein each of the plurality of encrypted timecodes comprises an offset from a broadcast

20   headend station time.

28.   A method for timeline protection comprising:

receiving, at a timecode generator, an encryption key and an implemented encryption method;

25   for each one of a plurality of frames, receiving, at the timecode generator, a timecode and an associated presentation time stamp (PTS) associated with the one frame;

for each one of the plurality of frames, encrypting, at the timecode generator, the timecode associated with the one frame using the encryption key and

30   the implemented encryption method, thereby producing a plurality of encrypted timecodes;

at a time associated with the associated presentation time stamp (PTS) associated with the one frame, outputting a packetized elementary stream (PES) comprising the plurality of encrypted timecodes;

receiving, at a timecode handler, an application file comprising a
5   decryption key and an implemented decryption method;

receiving, at the timecode handler, the PES comprising a plurality of encrypted timecodes, each of the plurality of timecodes being associated with a presentation time stamp (PTS); and

running the application file, the running comprising:
10   at the application file, performing the following when a system time clock (STC) value equals a PTS value associated with at least one of the plurality of encrypted timecodes:

decrypting the encrypted timecode associated with the PTS value using the decryption key and the implemented encryption method,
15   thereby producing a decrypted timecode.

29.   A system for timeline protection comprising:

a timecode generator comprising:

a timecode generator first input unit operative to receive an
20   encryption key and an implemented encryption method;

a timecode generator second input unit operative to receive a timecode and an associated presentation time stamp (PTS) for each one of a plurality of frames;

a timecode generator encryptor operative to encrypt the
25   timecode for each one of the plurality of frames, using the encryption key and the implemented encryption method, thereby producing a plurality of encrypted timecodes;

a timecode generator packetized elementary stream (PES) outputter operative to receive a plurality of encrypted timecodes and, at a time
30   associated with the associated presentation time stamp (PTS) associated with the one frame, to output a PES comprising the plurality of encrypted timecodes; and

a timecode handler comprising:

a timecode handler first input unit operative to receive at least one application file comprising a decryption key and an implemented decryption method;

a timecode handler second input unit active to receive the PES

5   comprising a plurality of encrypted timecodes, each of the plurality of encrypted timecodes being associated with a presentation time stamp (PTS); and

a timecode handler decryptor receiving each of the plurality of encrypted timecodes and operative to decrypt each of the plurality of encrypted timecodes using the decryption key and the implemented encryption method when a

10   system time clock (STC) value equals a PTS value associated with each of the plurality of encrypted timecodes.